

MARKED-UP VERSION

45. (Twice Amended) A method of measuring a rate of encoding for digital content, the method in a first program comprising the steps of:

- selecting an encoding algorithm and a bit rate;
- encoding a selected sample of digital content for a predetermined period of time;[ and]
- calculating a measured rate of encoding using the selected sample and the predetermined period of time, so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and the bit rate which has been selected; and
- transferring the measured rate of encoding to a second program for monitoring the rate of encoding in a batch process.

50. (Twice Amended) A method of measuring a rate of encoding for digital content, the method in a first program comprising the steps of:

- determining if a previously calculated measured rate of encoding has been stored for a specific encoding algorithm and a bit rate and if the previously calculated measured rate of encoding is stored then performing the sub-steps of:

- retrieving a previously calculated measured rate of encoding so as to provide an interim rate of completion for a subsequent process of encoding the content with the specific encoding algorithm and the bit rate;

- encoding digital content;

- calculating a current measured rate of encoding for the encoding of the digital content so as to provide an interim rate of completion for encoding; and

- updating the previously calculated measured rate of encoding using the current measured rate of encoding.

- transferring the measured rate of encoding to a second program for monitoring the rate of encoding in a batch process.

57. (Twice Amended) A method of measuring a rate of encoding for digital content, the method in a first program comprising the steps of:

- selecting an encoding algorithm and a bit rate;
- encoding a selected sample of digital content; [and]
- calculating a measured rate of encoding using the selected sample and an amount of time it took to encode the selected sample so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and a bit rate which has been selected; and

transferring the measured rate of encoding to a second program for monitoring the rate of encoding in a batch process.

58. (Twice Amended) A system for measuring a rate of encoding for digital content in a batch process, the system comprising:

a first program including:

- a receiver for receiving digital content to be encoded;
- an encoder for encoding a selected sample of the digital content for a predetermined period of time using an encoding algorithm and bit rate; [and]
- means for calculating a measured rate of encoding using the selected sample of digital content and the predetermined period of time so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and the bit rate; and

means for transferring the measured rate of encoding to a second program for monitoring the rate of encoding.

63. (Once Amended) A system for measuring a rate of encoding for digital content in a batch process, the system comprising:

a first program including:

means for retrieving a previously calculated measured rate of encoding so as to provide an interim rate of completion for a subsequent process of encoding the content with a specific encoding algorithm and a bit rate;

an encoder for encoding digital content;

means for calculating a current measured rate of encoding of the digital content;  
[and]

means for updating the previously calculated measured rate of encoding based on the current measured rate of encoding; and

means for transferring the measured rate of encoding to a second program for monitoring the rate of encoding.

71. (Twice Amended) A system for measuring a rate of encoding for digital content in a batch process, the system comprising:

a first program including:

a receiver for receiving digital content to be encoded;

an encoder for encoding a selected sample size of the digital content; [and]

means for calculating a measured rate of encoding rate using the selected sample size of digital content and the period of time it took to encode the selected sample size of digital content so as to provide an interim rate of completion for a subsequent process of encoding the content with an algorithm and a bit rate which has been selected; and

means for transferring the measured rate of encoding to a second program for monitoring the rate of encoding.

72. (Twice amended) A computer readable medium containing program instructions for determining an encoding rate for digital content in a batch process, the program instructions for a first program comprising instructions for:

- selecting an encoding algorithm and a bit rate;
- encoding a selected sample of digital content for a predetermined period of time; [and]
- calculating a measured rate of encoding using the selected sample and the predetermined period of time so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and the bit rate which has been selected; and
- transferring the measured rate of encoding to a second program for monitoring the rate of encoding.

78. (Twice Amended) A computer readable medium containing program instructions for measuring a rate of encoding for digital content in a batch process, the program instructions for a first program comprising instructions for:

- encoding a selected sample of digital content; [and]
- calculating an encoding rate using a selected sample size and the amount of time it took to encode the selected sample so as to provide an interim rate of completion for a subsequent process of encoding the content with an algorithm and a bit rate which has been selected; and
- transferring the measured rate of encoding to a second program for monitoring the rate of encoding.

### REMARKS

Applicants have studied the Office Action dated April 25, 2002 and have made amendments to the claims. It is submitted that the application, as amended, is in condition for allowance. By virtue of this amendment, claims 45 - 78 are pending. Reconsideration and allowance of the pending claims in view of the above amendments and the following remarks are respectfully requested. In the Office Action, the Examiner:

- rejected claims 45-78 under 35 U.S.C. § 103(a) as being unpatentable over Oda (U.S. 5,702,646) in view of Official Notice taken by the Examiner.

### Overview of the Current Invention

Preferred embodiments of the present invention provide an improved method, apparatus and computer readable medium to measure the progress or rate of encoding during an encoding process in a batch process. A batch process is typically used in content preparation where a supervisory application will manage the encoding of several tasks simultaneously. As described in the Background of the Invention at page 8 (Emphasis Added):

The process to compress content can require a large amount of dedicated computational resources, especially for larger content items such as full-length feature movies. Providers of compression algorithms offer various tradeoffs and advantages associated with their compression techniques. These tradeoffs include: the amount of time and computational resources needed to compress the content; the amount of compression achieved from the original content; the desired bit rate for playback; the performance quality of the compressed content; and other factors. Using an encoding program which take as input a multimedia file and generate an encoded output file with no interim indication of progress or status is a problem. Moreover, in many circumstances, other programs are used to call or to manage an encoding program with no interim indication of progress. This leaves the calling application with no way to gauge the amount of content that has been encoded as a percentage of the entire selection of designated to be encoded. In circumstances

where the calling program is trying to schedule several different programs to run at once this can be a problem. Furthermore, this can be especially burdensome in cases where batches of content have been selected for encoding and the content provider wants to determine the progress of the encoding process. Accordingly, a need exists to overcome these problems.

In order to overcome this problem with content preparation tools, especially as used in batch processing, the present invention teaches that this measured rate of encoding is transferred to the calling process. See, Specification of the Present Invention at page 95.

The encoding status can be transferred to another program that may invoke the calling process. This can help supervisory programs to encoding or co-dependent programs on encoding be operated and be batched for processing more efficiently.

Moreover, it is important to differentiate the process of selecting an algorithm and a bit rate for encoding versus the process of measuring the progress of the encoding task itself. In other words, the present invention is directed to providing an interim measurement of how far (i.e., what percentage of completion) has the encoding progressed for the content with a selected algorithm and bit rate has progressed. This is not the same as selecting the "rate of encoding" which is the algorithm and the bit rate. The present invention helps solve problems with the "scheduling" of the successive tasks during content preparation. As stated in the Background of the Present Invention on page 7 (Emphasis Added):

The process to compress content can require a large amount of dedicated computational resources, especially for larger content items such as full-length feature movies. Providers of compression algorithms offer various tradeoffs and advantages associated with their compression techniques. These tradeoffs include: the amount of time and computational resources needed to compress the content; the amount of compression achieved from the original content; the desired bit rate for playback; the performance quality of the compressed content; and other factors. Using an encoding program which take as input a multimedia file and generate an encoded output file with no interim indication of progress or status is a problem. Moreover, in many circumstances, other programs are used to call or to manage an

encoding program with no interim indication of progress. This leaves the calling application with no way to gauge the amount of content that has been encoded as a percentage of the entire selection of designated to be encoded. In circumstances where the calling program is trying to schedule several different programs to run at once this can be a problem. Furthermore, this can be especially burdensome in cases where batches of content have been selected for encoding and the content provider wants to determine the progress of the encoding process.

Accordingly, the present invention is directed to the measurement of the rate of encoding itself so as to determine the progress of the encoding process. The present invention is not directed to selecting the encoding rate i.e., the parameters used to set the encoding such as bit rate and the algorithm. This process is described in the present invention at pages 86 and 87 and FIG. 11 with the measured rate factor  $R_{\text{CURRENT}}$ ,  $R_{\text{NEW}}$ , and  $R_{\text{STORED}}$

where  $R_{\text{NEW}} = \text{AVERAGE OF } (R_{\text{STORED}} + R_{\text{CURRENT}})$  and  $R_{\text{NEW}} = (\text{length of Digital Content encoded})/(\text{amount of time})$ .

In order to more particularly point out and clarify these features of: measuring a rate of encoding in a batch process and so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and bit rate which has been selected and which is used to tell the calling process the measured rate by transferring the measured rate of encoding to a second program for monitoring the rate of encoding, the following language has been added the independent claims, i.e., claims 45, 50, 58, 63, 71, 72, and 78 as follows:

- Claims 45, 58, and 72
  - selecting an encoding algorithm and bit rate;
  - calculating a measured rate of encoding using the selected sample and the predetermined period of time, so as to provide an interim rate of completion for a subsequent process of encoding the content with the encoding algorithm and bit rate which has been selected.
  - transferring the measured rate of encoding to a second program for monitoring the rate of encoding

- Claims 50, and 63

retrieving a previously calculated measured rate of encoding so as to provide an interim rate of completion for a subsequent process of encoding the content with the specific encoding algorithm and bit rate;

calculating a current measured rate of encoding for the encoding of the digital content so as to provide an interim rate of completion for encoding; and

updating the previously calculated measured rate of encoding using the current measured rate of encoding.

transferring the measured rate of encoding to a second program for monitoring the rate of encoding

- Claims 57, 71, and 78

selecting an encoding algorithm and bit rate;

calculating a measured rate of encoding using the selected sample and an amount of time it took to encode the selected sample so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and bit rate which has been selected.

transferring the measured rate of encoding to a second program for monitoring the rate of encoding

Final Office Action Is Inappropriate In View of Newly Cited Official Notice which is Inoperable  
Applicants have studied the Office Action dated April 25, 2002. Applicants respectfully request entry of these remarks under the provisions of 37 C.F.R. § 1.116(a) in that the remarks below place the application and claims in condition for allowance, which allowance is respectfully requested. Claims 45-78 are pending. Reconsideration and allowance of the claims in view of the following remarks are respectfully requested.

As an initial matter, the Examiner made the Office Action final based on a new ground of rejection not stated in the earlier Office Action. Applicants respectfully traverse this decision. In the Final



Office Action, the Examiner rejects the present claims by citing Oda (U.S. 5,703,646), in view of Official Notice of the Examiner. The Applicants respectfully point out that Official Notice was not cited in any of the previous Office Actions and the Office Notice combined with the Oda reference produces a seemingly inoperative device. The Official Notice measures "how many" items are processed as opposed "how fast" or the "rate" of a process such as encoding as described in greater detail in the section below.

According to MPEP § 706.07(a): "Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection not necessitated by amendment of the application by applicant, whether or not the prior art is already of record."

The Applicants did not switch from one subject matter to another or resort to any subterfuge to keep the application pending.<sup>1</sup> Thus it is respectfully submitted that the final status of the Office Action is premature and should be withdrawn.

If the Examiner does not withdraw the final status of the Office Action, Applicants submit that this response does not raise new issues in the application. It is submitted that the present response places the application in condition for allowance or, at least, presents the application in better form for appeal. Entry of the present response is therefore respectfully requested.

Rejection under 35 U.S.C. §103(a) by Oda in view of Office Notice Taken By Examiner

As noted above, the Examiner rejected claims 45-78 under 35 U.S.C. § 103(a) as being unpatentable over Oda (U.S. 5,702,646) in view of Official Notice taken by the Examiner. As the Examiner points out on page 3 of her Action, Oda discloses "*discloses a method of determining an encoding rate for digital content, the method comprising the steps of: selecting an encoding algorithm and a bit rate*

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<sup>1</sup> See MPEP § 706.07.

and encoding a selected sample of digital content for a predetermined period of time (column 14, lines 28-38)." The Applicants agree. The Examiner goes on to state:

*"Oda does not disclose calculating a measured rate of encoding using the selected sample and the predetermined period of time, so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and the bit rate which has been selected. Official notice is taken that calculating a measured rate so as to provide an interim rate of completion for a subsequent process of encoding the content with the algorithm and the bit rate is well-known in the art. For example, when performing the defragment disk in Microsoft window, the process of defragment also provide the status of defragment an interim measurement of how far such as percent of completion, time remaining... Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the status indication in the defragment process and apply in the encoding process for the purpose of providing the status of encoding process."*

The Applicants respectfully disagree.<sup>2</sup> To begin, the Examiner is pointing to the process of measurement but is confusing the measurement of "how far a given process has proceeded" versus "rate of completion". These two measurements are different. Analogously, it would be the same as confounding an odometer and speedometer measurement in an automobile. The odometer measures "how far" and the speedometer "rate of travel." These two terms can be derived from the other but only with another parameter such as a constant velocity for a given time, or a known distance over a measured time interval. You can not simply derive an odometer reading from a speedometer reading and vice-versa, without other measurements or constants. Returning to the Microsoft Window "Disk Defragmenter Tool" (and this discussion applies to all other user interfaces under MS Windows as well i.e., copying large amount of data during file transfers), this tool indicates "how many" of the disk portions (e.g. tracks, clusters, and sectors) of a disk have been defragmented analogous to the odometer indicated how many miles have been driven. This does not show the "measured rate of defragmentation" for the entire defragmentation process because different disk

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<sup>2</sup> Applicants make no statement whether such combination is even proper.

portions require a different amount of defragging work to be preformed. Stated differently, the amount of defragging work needed changes from one area of the disk to another. The amount of defragging work is related to the number of defrag files, number of contiguous files, the amount of free space, the amount of system files for each given portion of the disk. Therefore the defrag process of the disk is never linear and showing "how many" of the total number of areas of the disk have been defragmented as a percentage of the total number of areas to defrag is not a "rate" but rather a "distance" of how far the process has progressed for all the different areas of the disk to be defragmented. Returning to the automotive analogy, saying that you traveled "how far" such as two miles out of a ten mile trip means nothing in terms of the "rate of completion." This is especially true if the first two miles are traveled on open highway with no traffic and the remaining eight miles are all in stop and go traffic. You cannot determine "the rate" at which the automobile has traveled just looking at the odometer but rather "how far" the car has traveled. In the present invention, the measured rate of encoding is analogous to a speedometer where the rate of completion is determined. In the MS Windows tools, the "percentage complete" is based on how many items have been processed, but since the process is not linear, one can not derive the rate or speed for the process to complete. Again, the present invention measures how fast the process will be complete, not the number of items processed. Accordingly, since the Examiner is pointing to measuring "how many" as a percentage complete versus "how fast" as a percentage complete using the Official Notice in MS Windows, the Applicants respectfully submit that the Examiner has failed to build a *prima facie* case of obviousness since the intent and function of the present invention is destroyed of measuring the "how many" items have been encoded rather than the "rate of encoding." Accordingly the independent claims 45, 50, 58, 63, 71, 72, and 78 distinguish over Oda taken alone or in view of Official Notice.

All the remaining claims 46-49, 51-57, 59-62, 64-70, and 73-77 depend from claims 45, 50, 58, 63, 71, 72, and 78 and since dependent claims contain all the limitations of the independent claims, claims 46-49, 51-57, 59-62, 64-70, and 73-77 distinguish over Oda in view of Official Notice, as well, and the Examiner's rejection should be withdrawn.

Moreover, the Applicants submit that the combination of Oda with Official Notice taken by the Examiner produces an "inoperative device." The Examiner's modification of Oda to measure "how many" items have been processed during encoding and is not the same as measuring a rate of encoding. Where the prior art combination, modification or substitution of which is the premises of the PTO's alleged *prima facie* case of obviousness, there likewise is a built-in traversal of the rejection. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). More recently see *Michael L McGinely versus Franklin Sports, Inc.* (Fed Cir 2001) teaches if references taken in combination would produce a "seemingly inoperative device," we have held that such references teach away from the combination and thus cannot serve as predicates for a *prima facie* case of obviousness. *In re Spinnoble*, 405 F.2d 578, 587, 160 USPQ 237, 244 (CCPA 1969) (references teach away from combination if combination produces seemingly inoperative device); see also *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (inoperable modification teaches away).

Although, the Applicants believe the present invention distinguishes over Oda taken alone or in view of Office Notice Taken, the Applicants have amended independent claims 45, 50, 58, 63, 71, 72, and 78 to clarify and distinguish over Oda taken alone or in view Official Notice for batch processing. Oda does not suggest or teach the patentably distinct of batch processing where a first program for measuring the "rate of encoding" subsequently transfers "the measured rate of encoding to a second program for monitoring the rate of encoding in a batch process." The present invention overcomes the problems with the prior art for content preparation during the encoding process where large batches of content such as tracks of an album are each encoded separately with a supervisory program scheduling and maintaining the overall process. This level of management between programs is nowhere suggested or taught by Oda taken alone or in view of Official Notice.

Continuing further, when there is no suggestion or teaching in the prior art for "transferring the measured rate of encoding to a second program for monitoring the rate of encoding in a batch process" the suggestion can not come from the Applicants' own specification. As the Federal Circuit has repeatedly warned against using the Applicants' disclosure as a blueprint to reconstruct the

claimed invention out of isolated teachings of the prior art. See MPEP §2143 and *Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 USPQ2d 1788 1792 (Fed. Cir. 1988) and *In re Fitch*, 972 F.2d 160, 12 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). The prior art reference Oda taken alone or in view of Official Notice does not even suggest, teach not mention batch processing. Very recently, the Federal Circuit again took up the identical question of Obviousness in combining references in the case *In re Sang Su Lee*, No. 00-1158 (January 18, 2002). In this case, the Board of Patent Appeals rejected all of Applicant's pending claims as obvious under § 103. The Federal Circuit vacated and remanded. Citing two prior art references, the Board stated that a person of ordinary skill in the art would have been motivated to combine the references based on "common knowledge" and "common sense," but it did not present any specific source or evidence in the art that would have otherwise suggested the combination. The Federal Circuit held that the Board's rejection of a need for any specific hint or suggestion in the art to combine the references was both legal error and arbitrary agency action subject to being set aside by the court under the Administrative Procedure Act (APA). Accordingly, with the suggestion or motivation found in Oda, the Examiner has failed to properly establish a prima facie case of obviousness of the invention as a "whole." The Applicants submit the present invention distinguishes over Oda for at least this reason as well.

For the foregoing reasons, independent claims 45, 50, 58, 63, 71, 72, and 78 distinguish over Oda taken alone or in view of Official Notice. All the remaining claims 46-49, 51-57, 59-62, 64-70, and 73-77 depend from claims 45, 50, 58, 63, 71, 72, and 78 and since dependent claims contain all the limitations of the independent claims, claims 46-49, 51-57, 59-62, 64-70, and 73-77 distinguish over Oda in view of Official Notice, as well, and the Examiner's rejection should be withdrawn.

**CONCLUSION**

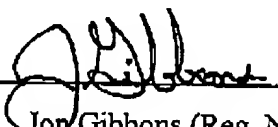
In view of the foregoing, Applicants respectfully submit that all of the grounds for rejection stated in the Examiner's office action have been overcome, and that all claims in the application are allowable. No new matter has been added. It is believed that the application is now in condition for allowance, which allowance is respectfully requested.

**PLEASE CALL** the undersigned if that would expedite the prosecution of this application.

Respectfully submitted.

Dated: July, 25 2002

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